

**PIKES PEAK
RADIO AMATEUR
ASSOCIATION
(PPRAA)**

Activities/Meetings

- HAM breakfast will be at: Daniel's Taco Shop, 6815 Space Village Ave Saturday, 5 November, Join us anytime between 8:00-9:30 AM
All are warmly invited
- PPRAA Board Meeting
Monday, 10 October
- PPRAA Club Meeting,
Wednesday, 12 Oct
IHOP
5749 Stetson Hills Blvd
- 10 Meter/2 Meter net
Every Thursday 7:00 pm
28.390 MHz—USB
144.200 MHz—USB
- PPRAA Elections
October club meeting

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Ø-BEAT

Volume 67 Issue 10

October 2016

October Meeting topic: Elections

EXERCISE EXERCISE EXERCISE

WARNING ORDER FOR 2016 SIMULATED EMERGENCY TEST (SET)

Situation Summary: The Colorado Division of Homeland Security and Emergency Management has issued a preparatory notice for all county and local Offices of Emergency Management (OEMs). Colorado Amateur Radio Emergency Service (ARES) has been asked to prepare to support state, county, and local OEMs; to support the Salvation Army and American Red Cross (ARC); and to provide weather spotting for the National Weather Service (NWS).

Per NWS forecasts, a significant weather system will develop over Colorado around 8-9 October. Timing for the eastern mountains and Front Range has this system producing heavy snow and high winds the afternoon of 8 October and lasting thru the 9th. The system should move out of the area on 10 October. Areas impacted include El Paso and Teller counties. Expect blizzard conditions and possible impacts to infrastructure including power, phones, and especially to roads.

Commonly impacted roads include:

- ◇ I-25, especially Monument Pass
- ◇ US-24 between Manitou Springs and Lake George
- ◇ US-24 between Colorado Springs and Simla
- ◇ CO-94 between Colorado Springs and Rush
- ◇ CO-115 between Colorado Springs and Penrose
- ◇ CO-83 between Colorado Springs and Franktown
- ◇ CO-105 between Palmer Lake and CO-83
- ◇ CO-67 between Victor and Westcreek
- ◇ Woodmen Rd

Any or all of these roads may be impassible. Therefore, ARES will deploy locally or pre-stage on the 8th ahead of the storm (Actual operating hours will be 0900-1300 on the 8th). Candidate operating locations include:

- ◇ Pikes Peak ARC Chapter: 38° 49.092'N, 104° 50.569'W
- ◇ Colorado Springs EOC: 38° 49.574'N, 104° 47.203'W
- ◇ El Paso County EOC: 38° 53.207'N, 104° 49.655'W
- ◇ Calhan PD: 39° 2.116'N, 104° 18.012'W
- ◇ Teller FD, Woodland Park: 39° 0.000'N, 105° 3.978'W
- ◇ Cripple Creek FD/EOC: 38° 44.809'N, 105° 10.753'W
- ◇ Ellicott Fire Station #2: 38° 49.855'N, 104° 23.176'W
- ◇ Tri-Lakes, Monument Fire Station: 39° 5.949'N, 104° 52.583'W
- ◇ Shelters and feeding locations as necessary

Most amateur radio communication will be via 2 m and 70 cm, though HF will be used to reach the Colorado state EOC in Centennial and the CO-WY ARC in Denver. For antenna aiming purposes:

- ◇ State EOC: 39° 34.501'N, 104° 52.958'W
- ◇ CO-WY ARC: 39° 43.409'N, 104° 59.077'W

ARES operators should prepare now. Be prepared to operate for up to 72 hours to include food/water, forms, power, clothing, meds, toiletries/sundries. Include a fluorescent & reflective safety vest or reflective safety belt. Commercial power may be unreliable. Make sure your family will be set if you deploy.

Check your vehicles. You should have good tires with at least a mud and snow rating (M+S) on the sidewall or better yet a snow rated tire (mountain and snowflake on the sidewall) which can pass the Washington's Head/Quarter Test (4/32nds of tread). Chains, AWD, or 4WD are advisable.

(Continued Page 5)



PPRAA Officers and Board of Directors

PPRAA Board of Directors consists of four elected officers, seven board members, as well the past president (time limit dependent). The Ø-Beat editor is a board appointed position and is also a member of the board.

Officers include:

- ⇒ President
- ⇒ Vice-President
- ⇒ Secretary
- ⇒ Treasurer

To send board member's email, browse to the officers section of our website: <http://ppraa.org/about-ppraa/officers>

President	Raleigh Holcomb	N4HYF
Vide-President	Jim Bishop	KDØKQL
Secretary	John Wishart	NGØI
Treasurer	Rich Milligan	ADØNP
Board Member	John Bloodgood	KDØSFY
Board Member	Glenn Brodt	N3ULW
Board Member	Frank Roger	KB3PDT
Board Member	Pam Scott	WØPRS
Board Member	Jim Rader	KDØNQM
Board Member	Virgil Yost	NØXRS
Board Member	Mike Anderson	WV7T
Ø-Beat Editor	Dan Scott	WØRO
Webmaster	Doug Nielsen	N7LEM

Online Resources

PPRAA Website

<http://ppraa.org>

The PPRAA website is the cornerstone for club related information, events, and technical information.

In addition you can register, pay dues, and submit donations. Donations to the PPRAA college scholarship fund are managed by FAR Scholarship Committee

Facebook / Google+

Follow activities as they unfold, or get reminders of upcoming events.

Links to both Facebook and Google+ social media sites can be found on the PPRAA.org.

Or from each social media site search on: Pikes Peak Radio Amateur Association.

PPRAA Forums

The PPRAA forums are intended to allow users to exchange ideas, ask and answer amateur radio related questions, and plan/discuss upcoming events.

This is a fantastic, but underutilized, tool. Check it out and register at:

PPRAA.Forumotion.net

Monthly Activities

Membership Meeting

Held the 2nd Wednesday of the month starting at 7:00.

IHOP
5749 Stetson Hills Blvd
(Just west of Powers Blvd)

NOTE: Many show up at 6 pm for kibitzing and grub.

Board Meeting

IHOP
5749 Stetson Hills Blvd Colorado Springs, CO 80906

6:30pm—8:00pm
On the Monday preceding the membership meeting.

Board Meetings are open to all members.

Ham Breakfast

Location changes monthly: Check ppraa.org or table of contents, page I for the breakfast meeting location.

10 Meter/2 Meter Net

Every Thursday at 7pm
Starts on 28.390 USB then transitions to 2 Meter SSB at 144.200 USB.



The RFinder H1

By Bob Witte, K0NR

Some exciting news wandered into my inbox this past week concerning a handheld radio driven by the Android operating system. The RFinder H1 is an FM plus DMR radio to be released at the end of this month. Click to enlarge the photo to the left to get a better view. I had proposed a similar concept back in 2012: The Android HT, so this radio immediately grabbed my attention.



Details are still a bit thin on the RFinder H1 (pronounced "Ar Finder H I") but this video gives you a glimpse of its operation. The 70cm band radio apparently also supports GSM and 4G/LTE mobile phone formats.

Click [here](#) for the video:

<https://www.youtube.com/watch?v=EjvEluPS0-k>

There are a few other YouTube videos available, one of which emphasizes the easy programming of the radio using the [RFinder online repeater directory](#). This makes perfect sense and is a great example of the power of a connected device. This feature would be very handy for programming up FM repeaters on the fly and outstanding for dealing with the complexity of DMR settings. The RFinder H1 includes DMR capability, something I wasn't thinking of back in 2012. That also makes perfect sense...embracing the growing amateur radio format that is based on industry standards.

Very cool development. What do you think?
73, Bob K0NR

Bob's very informational blogs can be found at:
<http://www.k0nr.com/wordpress/>

(ed) Although this has just become available, they are sold out. If you want to order one of the RFinder H1 models please visit:
<https://store10195853.ecwid.com/>

It seems like RFinder hit a good spot in the market.

Fine for Unlicensed Operation

08/31/2016

[UPDATED 2016-09-01 @ 1652 UTC] A New York City man faces a fine of \$23,000 for operating on Amateur Radio frequencies without a license and for transmitting a false officer-in-distress call on a New York City Police Department (NYPD) radio channel. The FCC issued a Notice of Apparent Liability for Forfeiture (NAL) on August 31 to Daniel Delise of Astoria. It details a history of complaints and alleged illegal radio operation on Delise's part that dates back to 2012.

"The Commission previously warned Mr Delise that unlicensed operation of this station was illegal and that continued operation could result in further enforcement action," the FCC said in the NAL. "Mr Delise's deliberate disregard of the [Communications] Act and the Commission's warning warrants a significant penalty."

ARRL Hudson Division Director Mike Lisenco, N2YBB, credited the intervention earlier this year of New York Rep Peter King with getting the case "off the back burner and up to the front of the line." Lisenco and ARRL General Counsel Chris Imlay, W3KD, met with the Republican congressman in January to discuss ongoing interference issues in the Greater New York City/Long Island area. King subsequently wrote FCC Chairman Tom Wheeler to urge "timely and visible enforcement."

Lisenco also praised the direct involvement of FCC Enforcement Bureau Region I Director David C. Dombrowski "and his willingness to work with us and to use information we provided as potential leads," as well as "a system of grass-roots reporting that depicted the current pattern of intentional interference with legitimate amateur communications on local repeaters," coordinated by Richie Cetron, K2KNB, an Official Observer and Assistant Hudson Division Director. Lisenco said FCC Special Counsel Laura Smith "has been a great help in keeping us informed and in the loop."

Visit the ARRL web site for the rest of this article.

This article can be found at:

<http://www.arrl.org/news/fcc-proposes-substantial-fine-for-unlicensed-amateur-operation-false-police-call>



PPRAA Board Meeting Minutes 12 September 2016

Present: Raleigh Holcomb, John Wishart, Mike Anderson, Rich Milligan, Jim Bishop, Jim Rader, Pam & Dan Scott, Frank Rogers, Doug Nielsen, John Bloodgood, Virgil Yost

The meeting was called to order by President Raleigh Holcomb at 6:32 PM at the IHOP Restaurant at Powers & Stetson Hills.

Silent Keys: Mark Taylor's wife and his father, Eleanor Van Winkler, and Eileen Armagost, KD0DGL.

The previous (July & August) meeting's minutes were approved as published in the Zero Beat.

Treasurer's Report

Rich Milligan reported that we had \$12,642.02 in our accounts as of 31 August 2016.

Committee Reports

Club Station - re: New radio for the station. Jim Rader will be checking on new & used units. Need CAT control. Jim Bishop reported that we have the main sections of the tower erected, but we still need the top tapered section. Virgil has a tapered top section available. The remote station is hooked up. A wireless access point has been added to the trailer.

Moved/seconded to sell the three solar panels for \$120 to Steve to donate to the dish group (DSES).

Education - Mike has a couple of students studying for Tech. He still needs some help in getting his house cleaned up, due to Rhoda's broken hip.

JOTA (Jamboree on the Air - Boy Scouts)

This event will be held October 15, 2016, at the El Paso County Fairgrounds events complex in Calhan. Our call sign will be 'W0J'. There will be a 'recon' session on Sept 20 to check out the facilities.

Special Events stations will be conducted on Nov 11 (Veterans' Day) and Dec 7 (Pearl Harbor Day).

ARES Report

John Bloodgood reported on upcoming events (C S Marathon, Tour de Cure). Volunteers are still needed for these events. AR Parity Act has passed the House and been moved to the Senate. Your support is needed to get this passed. Sept is National Preparedness Month. Simulated Emergency Test (SET) will be on Oct 8.

Elections

These will be coming up in October. Nominees are being sought for all positions. Board will be the nominating committee.

VE Report

Doug reported that at the last session they had 5 test-takers (4 techs, 1 general), all passed. Next test session is Oct 1.

Megafest 2017

Jim Rader has generously agreed to be chairman again. Raffle prizes have not been purchased as yet.

Other Discussions

Virgil has called Marsh, our insurance carrier. They recommended that we have a written monetary agreement with the Ellicott FD. We will try to get this implemented.

Jim Rader will also check on used radios in Florence. This would be for an additional club station radio.

Next Board meeting: Monday, October 10, 2016, 6:30PM at the IHOP at Powers & Stetson Hills.

The meeting was adjourned at 7:17 PM.

Respectfully submitted,
John Wishart NGØ1
PPRAA Secretary
25 September 2016

PPRAA Business Meeting Minutes 14 September 2016

The meeting was called to order at 7:01 PM by President Raleigh Holcomb at the IHOP Restaurant on Stetson Hills near Powers Blvd. Approximately 43 members and guests were present.

Silent Keys: Mark Taylor's wife, Mark's father, and Eileen Armagost, KD0DGL.

Minutes Approval

July and August minutes were approved as published in Zero Beat.

Treasurer's Report Rich Milligan reported that we had \$12661.41 in our bank accounts.

Committee Reports

Club Station - Jim Bishop reported on our club station. A second tilt-over tower was just installed, but we still need to add a tapered top section, antenna, rotator, and cabling to complete it. The remote station is operational.

We are currently considering the addition of another HF radio to the club station. We would need to have CAT capability, but would also like to have satellite capability (full duplex on UHF/VHF). Considering either new or used.

Solar panels (3) have been sold for \$120 to Steve. They are to be used at the DSES site.

Elections

Elections will be held on October 12. Following positions are vacant: VP, treasurer, board members (0 to 2). Nominations are being taken for all positions.

ARES Report

John Bloodgood reported on several recent ARES activities. C.S. Marathon, Tour de Cure in Parker, Zombie Run, Bikes and Brews events are upcoming. Salvation Army meals at Thanksgiving & Christmas also upcoming. Volunteers are still needed for these events. Register for events on the PPARES websites, ppares.net or ppares.org. AR Parity Act has passed the House and been sent to the Senate.

Special Events - Mike Anderson

Boy Scouts JOTA at El Paso Fairgrounds
Veteran's Day
Pearl Harbor Day

Virgil reported on the [club picnic](#). Good time was had by all.

[Laurel VE session](#) was held last Saturday per Dennis. 5 candidates = 4 new techs and 1 general.

Program

Rick Peterson, WA6NUT, presented a program on 'FreeDV Plus: Adding Video To Voice on HF.' FreeDV is free software for digital voice. Informational website is FreeDV.org.

Upcoming Events

Next Board Meeting: 6:30PM, Monday, October 10, 2016, at IHOP Restaurant at Powers & Stetson Hills.

Next PPRAA regular meeting: 7PM, Wednesday, October 12, 2016, also at the IHOP Restaurant.

The meeting was adjourned at 9:00 PM.

Respectfully submitted,
John Wishart NGØ1
PPRAA Secretary



EXERCISE EXERCISE EXERCISE (Cont)

(Continued from page 1)

Check all fluids including anti-freeze, oil, and washer fluid and use appropriate temperature ranges. Check your wiper blades and consider replacing with winter blades. Have a phone charger, flashlight, small shovel, jumper cables, 1st Aid kit, blanket, and small tool kit in your vehicle.

More information will be sent out as this Operations Order/Incident Action Plan develops. Check your email a few times each day and if you have your email reflector option set to "Digest", consider changing it. To do this, go to <http://>

mailman.qth.net/mailman/listinfo/ppares and log in. You should see a list of Non-Digest and Digest members. If you are a digest member, click on your name and then scroll down to "Set Digest Mode" and set it to "Off" and then scroll down to and click on "Submit My Changes". Also monitor the 146.970 repeater.

An availability sign up sheet can be found at:

https://docs.google.com/spreadsheets/d/1obHhAg-rtWyPlcNYGqa9Gad5ul_hdo6t-pFuT75rvy4/.



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band

www.isotronantennas.com

WHAT IS IN A CAPACITOR? - PART 2

WHAT IS IN A CAPACITOR? - PART 2

The last issue described some basics of a capacitor. This issue will continue on this subject.

How do we measure the size of a capacitor?

The fundamental unit of capacitance is the farad, but this unit is much too large for practical work. Capacitance is usually measured in "microfarads" (uf) or picofarads (pf). The microfarad is one-millionth of a farad, and the picofarad is one-millionth of a microfarad. Capacitors nearly always have more than 2 plates, the alternate plates being connected together to form two sets. This makes it possible to attain a fairly large capacitance in a small space, since several plates of smaller individual area can be stacked to form the equivalent of a single large plate of the same total area. Also, all plates, except the two on the ends, are exposed to plates of the other group on both sides, and so are twice as effective in increasing capacitance.

What type of capacitors are used in our radios?

The types of capacitors used in radio work differ considerably

in physical size, construction and capacitance. In variable capacitors (almost always constructed with air for the dielectric) one set of plates is made movable with respect to the other set so that the capacitance can be varied. Fixed capacitors, that is, assemblies having a single, non-adjustable value of capacitance, also can be made with metal plates and with air as a dielectric, but usually are constructed from plates of metal foil with a thin solid or liquid dielectric sandwiched in between, so that a relatively large capacitance can be secured in a small unit. The solid dielectric commonly used are mica, paper, certain plastics and special ceramics.

The "electrolytic" capacitor uses aluminum foil plates with a semi-liquid conducting chemical compound between them; the actual dielectric is a very thin film of insulating material that forms on one set of plates through electrochemical action when a DC voltage is applied to the capacitor. The capacitance obtained with a given plate area in an electrolytic capacitor is very large, compared with capacitors that have other dielectrics, because the film is so thin, much less than any thickness that is practicable with a solid dielectric.

A word of caution about electrolytics, be sure to watch the

polarity. The capacitors are always marked negative and positive. Reversing polarity can be quite exciting. However, some would feel more at home if there was a bit of an explosion associated with their project.

The use of electrolytic capacitors is mainly used in power supply filtering and audio bypass applications. Other types of capacitors are used throughout the frequency range from audio to the high RF spectrum.

73,

Ralph WD0EJA

Oct 2016

BILAL COMPANY

137 MANCHESTER DR.

FLORISSANT, CO. 80816
U.S.A

PH/FX: 719/687-0650

wd0eja@isotronantennas.com

Should U.S. ham tests be given abroad?

By Dan Romanchik, KB6NU

A couple of weeks ago, I received an e-mail from a reader who wanted my opinion about a thread on the HamRadio-HelpGroup mailing list. The e-mail that started the discussion was a message from an American living in Italy who wanted to take the Technician Class exam. In her e-mail, she told of her troubles finding a test session, and then when she did find one, what she perceived as "irregularities" in the testing process. Reading the thread was a little disconcerting, and I blogged about this issue (<http://www.kb6nu.com/u-s-amateur-radio-license-exams-given-outside-u-s/>).

I understand why foreign national go to the trouble of taking the U.S. license exam. Some of them even buy my study guides. About a year ago, for example, I swapped some e-mail with a guy from Malaysia about why he purchased my study guide and why he wanted a U.S. license. He said that it was because a neighboring country offered reciprocal operating privileges to U.S. licensees, but not Malaysian licensees! He mentioned that he tested for the license in Thailand. Basically, my Malaysian friend was using the U.S. licensing process to circumvent the Malaysian licensing process. Australians seem to do this, too. Apparently, according to one of the VKs who commented on the thread, getting a U.S. Tech license is easier than testing for an Australian Foundation license. So, some Australians get a U.S. Tech license first, then get the Aus-

tralian government to issue them a VK Foundation license based on the reciprocal operating agreement between the U.S. and Australia.

Another reason that some outside the U.S. obtain U.S. amateur radio licenses is the challenge. That's the reason Martin Butler, M0MRB/W9ICQ, of ICQPodcast fame, gave when I spoke to him about this recently.

Are these reasons "good enough" to continue this program of licensing non-U.S. citizens? My first reaction was that no, it's not good enough, and I questioned whether or not the ARRL VEC should sanction non-U.S. VEs and whether or not the FCC should even allow testing outside of the United States.

I didn't see the need for conducting these test sessions or the desirability (to the U.S.) of licensing foreign nationals. I reasoned that not only was there a greater possibility of test fraud, this program could lead to foreign authorities claiming that the U.S. was meddling in their affairs. This post garnered a lot of comments. Several of them took me to task for voicing this opinion and were in favor keeping the current licensing program in place. There were a variety of reasons.

One of the reasons in favor of using the U.S. licensing process is that in many countries, amateur radio license exam sessions are not very frequent. Another is that they often are quite expensive. This creates an artificial barrier to getting an amateur radio license. Using the U.S. licensing system breaks through this barrier and allows many

more to enjoy amateur radio.

Of course, for everything to be on the up and up, the foreign authorities would have to condone the use of U.S. license tests. Apparently, this is the case in Thailand and Australia. I don't know about Italy, but I'm guessing that the authorities there don't really care about Italians

obtaining U.S. licenses.

Perhaps the best comment came from Thida, HSIASC/KH6ASC. He noted that the tests in Thailand were administered very strictly, and says, "The U.S. may lose some callsigns, but what the U.S. and U.S. hams get from us is goodwill, very positive feeling. Everyone who gets U.S. license is so proud, and others look at them respectfully." Since Part 97.1(e) lists as one of the purposes of amateur radio, "Continuation and extension of the amateur's unique ability to enhance international goodwill," I'm now all in favor of offering U.S. ham tests abroad.

Dan, KB6NU, is the author of the "No Nonsense" amateur radio license study guides, and blogs about amateur radio at KB6NU.Com, and you can contact him by e-mailing cwgeek@kb6nu.com. When he's not pondering the vagaries of the U.S. licensing system, you'll find him working CW on the HF bands.



**Dan Romanchik
KB6NU**

Dan, KB6NU, is the author of the "No Nonsense" amateur radio license study guides, and blogs about amateur radio at KB6NU.Com, and you can contact him by e-mailing cwgeek@kb6nu.com. When he's not pondering the vagaries of the U.S. licensing system, you'll find him working CW on the HF bands



VE Testing & Education—Colorado Springs (PPRAA)

Pikes Peak Radio Amateur Association (PPRAA)

When:

Monthly

2nd Saturday at 9:15 AM

Location:

C21 Library,
ENT Conference Center
1175 Chapel Hills Dr
Colorado Springs, CO
80920

Directions available at:

ppraa.org/ve-testing

or contact:

Richard Milligan

VE@PPRAA.org

Mike Anderson, WV7T does personal and small group training for all license classes.

Mike also does Morse code training.

Mike can be reached at:

719-229-8610

vv7t@aol.com



VE Testing Woodland Park (MARC)

MOUNTAIN AMATEUR RADIO CLUB (MARC)

When:

Jan, Mar, May, Jul, Sep, Nov

1st Saturday at 10 AM

Location:

Woodland Park
Woodland Park Library-
Community Meeting RM
218 East Midland Avenue

Directions:

<http://www.nx0g.org/ve.html>

or contact

Wes Wilson (KØHBZ)

k0hbz@arrl.net

Call (719) 687-8758



Applicants will need the following items:

1. A valid PHOTO ID, driver's license preferred (if you do not have a valid photo ID, please call for alternative identification requirements).
2. Your FRN or SOCIAL SECURITY NUMBER (now required – this includes children).
3. Your CURRENT ORIGINAL amateur radio license (if any) and a PHOTOCOPY for the VE Team to keep.
4. The CURRENT ORIGINAL CSCEs you have and a PHOTOCOPY for the VE Team to keep.
5. MARC Only: Cash, Check or Money Order for \$15 (standard ARRL VE Fee). Checks and money orders should be made out to ARRL. This covers all exams you wish to take at this VE session. There is not cost for the PPRAA tests.

NOTE: PPRAA and MARC VE Team policy, as with many VE Teams, is to not allow same day retests on failed exams.

PPRAA – Colorado Springs testing only:

Anyone passing their Technician Class examination at a PPRAA test session will receive a free year's membership to the Pikes Peak Radio Amateur Association

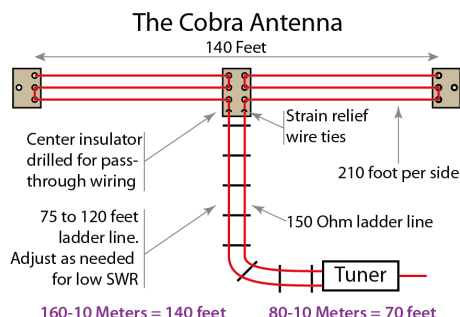
Cobra Antenna

By: Dan Scott, W0RO

While searching the web for 0-Beat ideas I came across a wire antenna that I thought would be of interest to many of us I came across the Cobra Antenna design. It is, or is coming into, the season for 160 Meters, and this antenna seems to be up to the task.

The Cobra antenna was originally designed by Raymond Cook, W4JOH. You can find kits and for this antenna online. I found that Joe Kramas, K1JEK, offers the antenna through his online store.

The Cobra antenna is a 10-160 meter antenna that when installed required a 140 foot run. As you can see in the drawing there will be a good amount of wire. If the antenna is 140 foot total in length, then each half the antenna would be 70 foot and require 210 foot of wire per side.



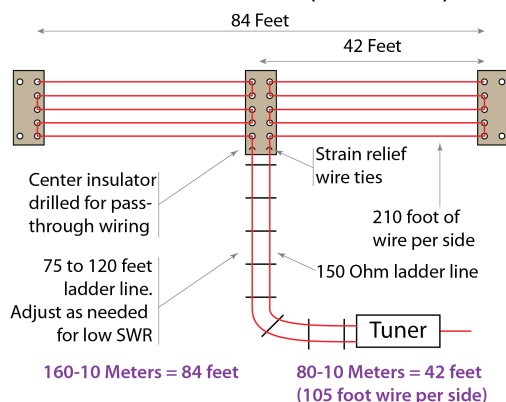
I do not have this antenna but its characteristics are reported to be similar to the G5RV. The reports vary with indications it has better (or worse) in performance, can easily tune more bands, and has a greater bandwidth than the G5RV.

It was not this design the caught my attention but a possible alternative design. As you can see in my "shortened" version of the design, my version uses the same amount of shielded wire, but total

length of the antenna is simply 210 foot of wire divided by 5 instead of by 3.

Maybe you are not be considering 160 meters, but instead need 80 meters. If so, this should create a very nice shortened 80 meter antenna with an end-to-end length of 42 foot.

The Cobra Antenna (Shortened)



To learn more about the Cobra antenna browse to:

<http://www.hamuniverse.com/cobraantenna.html>

Also see:

<http://www.k1jek.com/index.html>

Or simply google: Cobra Antenna

By: Dan Scott (w0ro)
0-Beat editor

Dan has not tried either of these antenna designs. When the foot calculation of length of one side has an answer of 42, or 42 for the length of the 80 meter version, he knew it had to be spot-on!



This picture has absolutely nothing to do with the article on this page or any article in this month's 0Beat.

These were flying around the weekend of October 1st and I took a couple pictures as I was working on the 0-Beat.

**PIKES PEAK RADIO
AMATEUR
ASSOCIATION**

Send membership application to:

Pikes Peak Radio Amateur PO
Box 16521
Colorado Springs, CO
80935-6521

General Questions:
ppraa@ppraa.org

ØBeat:
zerobeat@ppraa.org



ppraa.org

Get Radio Active, get on the air!

Membership Application:

Date: ____ / ____ / ____ New Membership: Yes / No

Name: _____

Address: _____

City/State/Zip: _____

Call: _____ Class: ____ Phone # (____) _____

Email: _____

Are you a ARRL member: Yes / No

Additional Family Members:

Name1: _____ Call: _____ Class: ____ ARRL Member: Yes / No

Name2: _____ Call: _____ Class: ____ ARRL Member: Yes / No

Name3: _____ Call: _____ Class: ____ ARRL Member: Yes / No

____ \$15.00 Full Member

____ \$10.00 Full Member over 65

____ \$18.00 Family Membership

____ \$12.00 Family Membership over 65

\$____ Membership Amount

\$____ Scholarship Fund Donation

\$____ PPRAA General Fund Donation

\$____ Total

2015 Scholarship Fund

This last year the donations to PPRAA Scholarship Fund have been slipping.

The scholarship is for a hard science or math related field of study. Those fields of study are, or are similar to, Physics, Chemistry, Math, Electrical Engineering, Bio Engineering, etc.

There are many ways to make your tax deductible donation to this fund. Contributions may be made via:

⇒ [PPRAA website \(http://ppraa.org\)](http://ppraa.org)

⇒ Part of your membership renewal,

⇒ Club meetings and event.

⇒ Directly to the fund at:
FAR Scholarship Committee
P.O. Box 911
Columbia, MD 21044

**Make checks to:
PPRAA Scholarship**

Ø- Beat Banner

This photograph of Pikes Peak from Fountain, CO was taken by Pam W0PRS, October 6th 2016.

The theme of the banner is Pikes Peak Region which include PPRAA activities.

If you would like to submit pictures for the Ø-Beat banner, please send them to:
zerobeat@ppraa.org

Please Include "[Ø-beat]" as part of the subject line.